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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,379	02/01/2002	Ronald A. Heddleson	5367USA	2577

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EXAMINER

PRATS, FRANCISCO CHANDLER

ART UNIT PAPER NUMBER

1651

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 10/062,379	Applicant(s) HEDDLESON ET AL.	
	Examiner Francisco C Prats	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The amendment filed June 28, 2004, has been received and entered. The text of those sections of Title 35, U.S. Code, not included in this action can be found in a prior office action.

Claims 1-5, 7-11 and 13-20 are pending and are examined on the merits.

Response to Amendment

The amendment to the claims filed on June 28, 2004, does not comply with the requirements of 37 CFR 1.121(c) because applicant failed to indicate the insertion of significant language. Amendments to the claims filed on or after July 30, 2003 must comply with 37 CFR 1.121(c)(2) which states (emphasis added):

(2) *When claim text with markings is required.* All claims being currently amended in an amendment paper shall be presented in the claim listing, indicate a status of "currently amended," and be submitted with markings to indicate the changes that have been made relative to the immediate prior version of the claims. ***The text of any added subject matter must be shown by underlining the added text.*** The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. Only claims having the status of "currently amended," or "withdrawn" if also being amended, shall include markings. If a withdrawn claim is currently amended, its status in the claim listing may be identified as "withdrawn-currently amended."

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Applicant failed to indicate, by underlining, the addition of the recitations "first" and "second", throughout claim 1. Applicant also failed to indicate, by underlining, the newly inserted step of "adding said beta-glucan into said first food product or food product intermediate;" which now follows the "providing" step in claim 1. While failure to adhere to 37 CFR 1.121 can be considered submission of a non-responsive amendment, the amendment will be considered in full, in the interest of compact prosecution. However, future submissions in contravention of 37 CFR 1.121 will be considered non-responsive.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-5 and 7-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the

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claimed invention. Specifically, as amended, claim 1 and its dependents recite the addition of a 5 kD or smaller beta glucan to a food or a food intermediate, and then contacting the food/intermediate with a modifying agent which may be a glucanase enzyme, thereby producing a second food/intermediate. The as-filed specification does not support this new claim language. Rather, the specification teaches that the 5 kD or smaller glucan is obtained by contacting the food or intermediate containing a larger glucan. The specification as filed does not support contacting a food intermediate containing a 5kD or smaller glucan with an enzyme. This is a new matter rejection.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 depends from claim 1 and requires contacting "the food product or food product intermediate" with an additional modifying agent. However, as amended, claim 1

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recites a "first" and "second" food product intermediate. It is therefore not clear whether "the food product or food product intermediate" in claim 9 refers to the first or second food product/intermediate recited in claim 1 as amended.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10, 11 and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Jensen et al (U.S. Pat. 4,871,571).

Jensen discloses a glucanase-digested beta glucan bulking agent from barley, wherein over 80% of the molecular species are from DP₃ to DP₅. See Example 1, at column 8. Because the molecular weight of glucose is about 180 Da, the molecular weight of the various species is from about 540 Da to 900 Da, well within the claimed ranges. Thus, because it contains all of the claimed ingredients, the enzymatic digestion milieu of Jensen, for example in Example 1, anticipates product claim 10.

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With respect to other product claims, it is noted that Jensen's glucan is prepared after amylase digestion of the barley. However, the glucan product resulting from Jensen's process is the same as one which would be produced from *in situ* glucanase digestion of the barley. Thus, in addition to claim 10, Jensen must be considered to anticipate product claims 11 and 13-17. Moreover, Jensen discloses the use of the enzyme-digested glucan in edible products such as cookies. See Example 2, at columns 8 and 9.

All of applicant's argument regarding this ground of rejection has been fully considered but is not persuasive of error. It is noted, as argued by applicant, that Jensen adds the glucans to foods for the purpose of providing alternative soluble sweetener type bulking agents, and that Jensen does not disclose that foods containing beta-glucans of the claimed molecular weight provide improved bile-acid binding functionality. However, the fact remains that Jensen's products contain the claimed ingredients, and therefore necessarily possess the alleged novel properties. In this regard note specifically that the issues of motivation and unexpected results are not relevant to the analysis of the propriety of an anticipation rejection under § 102. In sum, because Jensen's

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products contain all of the ingredients recited in the claims, the rejection must be maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al (U.S. Pat. 4,871,571).

As discussed above, Jensen discloses a glucanase-digested beta glucan bulking agent from barley, wherein over 80% of the molecular species are from DP₃ to DP₅. See Example 1, at column 8. As also discussed above, Jensen is therefore considered to

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anticipate many of the claimed embodiments. Jensen differs from the claims under examination in that Jensen does not disclose the precise process parameters recited in claim 18. However, Jensen clearly discloses that heat inactivation of the glucanase occurs upon heating to 90 degrees for 20 minutes. Thus, the artisan of ordinary skill, recognizing from Jensen the requirement of heat inactivation, clearly would have been motivated to have performed said inactivation step under any conditions suitable for the inactivation, including those recited in claim 18. Absent some demonstration of an unexpected result, the inactivation step recited in claim 18 must be considered obvious.

Similarly, the determination of suitable protein and starch amounts, recited in claims 19 and 20 must be considered obvious in view of the fact that one of ordinary skill would clearly have recognized that those ingredients would have affected both the physical and nutritional properties of the resulting glucan, and would therefore have been motivated to have optimized those values, depending on the desired properties of the final product. Absent some demonstration of an unexpected result, the determination of suitable amounts of protein and starch in glucanase-hydrolyzed cereal flour must be considered a result-

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effective parameter routinely optimized by the artisan of ordinary skill.

All of applicant's argument regarding this ground of rejection has been fully considered but is not persuasive of error. It is again noted, as argued by applicant, that Jensen adds the glucans to foods for the purpose of providing alternative soluble sweetener type bulking agents, and that Jensen does not disclose that foods containing beta-glucans of the claimed molecular weight provide improved bile-acid binding functionality. However, it is well established that claimed subject matter is properly considered obvious under § 103(a) as long as the prior art suggests practicing the claimed subject matter, even if the prior art's reason for practicing the claimed subject matter is different than applicant's. See, e.g., MPEP § 2144, subsection entitled "RATIONALE DIFFERENT FROM APPLICANT'S IS PERMISSIBLE" and cases cited therein. Thus, although Jensen adds the glucan to foods for a different reason than applicant, the end result is that the same improving ingredient as recited in applicant's claims is added to the same product, food. Thus, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.

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See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). It is therefore respectfully submitted that the rejection must be maintained.

Claims 1-5 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al (U.S. Pat. 4,927,654) in view of Jensen et al (U.S. Pat. 4,871,571) and Van Eijk (U.S. Pat. 5,023,094).

As amended, the claims recite a process wherein a 5 kD or smaller glucan is added to a first food product or food product intermediate, then a modifying agent which may be a glucanase enzyme is also added to the first food product/intermediate, and a second food product/intermediate is prepared.

Barnett discloses processes whereby hemicellulose-based water soluble bulking agents suitable for replacing sucrose, other carbohydrates and fats are added to baked goods such as breads. See column 4, lines 54-65. Barnett differs from the claims in failing to add a beta-glucan of less than 5 kD to the bread. However, Jensen clearly discloses that bulking agents comprised of beta-glucan of less than 5 kD are advantageous when used for replacing sucrose and other carbohydrates in foods because of their taste, high stability at low pH level, and superior body. See column 2, lines 5-10. Thus, the artisan of

ordinary skill preparing baked goods such as bread according to the Barnett disclosure would have been motivated by Jensen's disclosure of the superior properties of his soluble bulking agent to have substituted Jensen's soluble bulking agent for Barnett's soluble bulking agent.

Barnett also differs from the claims in failing to add a modifying agent to the baked goods disclosed therein. However, Van Eijk discloses that addition of glucanase to bread dough prior to baking results bread having improved properties. See, e.g., column 2, lines 47-56. Thus, the artisan of ordinary skill would have been motivated by Van Eijk's disclosure of the desirability of adding glucanase to bread to have added glucanase to the soluble bulking agent-containing breads of Barnett. It is noted that the cited patents do not disclose the use of glucanase enzymes recited in claims 4 and 5. However, in view of Van Eijk's clear disclosure of the requirement of using beta glucanase enzymes in his process, the selection of known commercially available enzymes such as those recited in claims 4 and 5 must be considered obvious absent some demonstration of an unexpected result coming from their use. Moreover, with respect to claim 9, note that any of the additional ingredients in the bread disclosed by Barnett can be considered modifying agents.

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In sum, as amended the claims encompass the addition of two ingredients, glucanase enzyme and beta glucan of less than 5 kD, known to be desirably added to cereal containing food products such as breads. A holding of obviousness is therefore required.

It is noted that applicant has not directed argument to this new ground of rejection necessitated by amendment. However, to the extent that the enzyme and glucan are added to the cereal product for different reasons than improving the bile acid binding of the product, it is again pointed out that claimed subject matter is properly considered obvious under § 103(a) as long as the prior art suggests practicing the claimed subject matter, even if the prior art's reason for practicing the claimed subject matter is different than applicant's.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this

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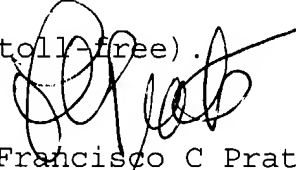
action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francisco C Prats whose telephone number is 571-272-0921. The examiner can normally be reached on Monday through Friday, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Francisco C Prats
Primary Examiner
Art Unit 1651

FCP